

# Pipe and Tubing





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## Pipe Specifications

- Welded and seamless pipe material conforms to ASTM A312, ASTM A999
- Stainless pipe dimensions conform to ASTM A999, ASME B36.19, ASME B36.10, A276
- Manufacturing facility is ISO 9001:2008
- Pipe sold as single random lengths
- Cut-to-length, threading and grooving available upon request

## Instrumentation Tubing Specifications

- Instrumentation tubing dimensions and materials conform to ASTM A269 and ASTM A213

## Sanitary Tubing Specifications

- Sanitary tubing dimensions and materials conform to ASTM A269, ASTM A270 and 3-A Approved





**Fig. S6014WP & S6016WP - Sch 10 Welded Pipe**

| Nominal Diameter<br>in | Part Number |            | OD<br>in | Wall Thickness<br>in | Pipe Length<br>ft | Weight<br>lb / ft |
|------------------------|-------------|------------|----------|----------------------|-------------------|-------------------|
|                        | 304 / 304L  | 316 / 316L |          |                      |                   |                   |
| 1/2                    | S6014WP004  | S6016WP004 | 0.840    | 0.083                | 20                | 0.6               |
| 3/4                    | S6014WP006  | S6016WP006 | 1.050    | 0.083                | 20                | 0.8               |
| 1                      | S6014WP010  | S6016WP010 | 1.315    | 0.109                | 20                | 1.4               |
| 1-1/4                  | S6014WP012  | S6016WP012 | 1.660    | 0.109                | 20                | 1.8               |
| 1-1/2                  | S6014WP014  | S6016WP014 | 1.900    | 0.109                | 20                | 2.0               |
| 2                      | S6014WP020  | S6016WP020 | 2.375    | 0.109                | 20                | 2.6               |
| 2-1/2                  | S6014WP024  | S6016WP024 | 2.875    | 0.120                | 20                | 3.5               |
| 3                      | S6014WP030  | S6016WP030 | 3.500    | 0.120                | 20                | 4.3               |
| 4                      | S6014WP040  | S6016WP040 | 4.500    | 0.120                | 20                | 5.6               |
| 5                      | S6014WP050  | S6016WP050 | 5.563    | 0.134                | 20                | 7.7               |
| 6                      | S6014WP060  | S6016WP060 | 6.625    | 0.134                | 20                | 9.2               |

**Fig. S6044WP & S6046WP - Sch 40 Welded Pipe**

| Nominal Diameter<br>in | Part Number |            | OD<br>in | Wall Thickness<br>in | Pipe Length<br>ft | Weight<br>lb / ft |
|------------------------|-------------|------------|----------|----------------------|-------------------|-------------------|
|                        | 304 / 304L  | 316 / 316L |          |                      |                   |                   |
| 1/8                    | S6044WP001  | S6046WP001 | 0.405    | 0.068                | 20                | 0.2               |
| 1/4                    | S6044WP002  | S6046WP002 | 0.540    | 0.088                | 20                | 0.4               |
| 3/8                    | S6044WP003  | S6046WP003 | 0.675    | 0.091                | 20                | 0.5               |
| 1/2                    | S6044WP004  | S6046WP004 | 0.840    | 0.109                | 20                | 0.8               |
| 3/4                    | S6044WP006  | S6046WP006 | 1.050    | 0.113                | 20                | 1.1               |
| 1                      | S6044WP010  | S6046WP010 | 1.315    | 0.133                | 20                | 1.6               |
| 1-1/4                  | S6044WP012  | S6046WP012 | 1.660    | 0.140                | 20                | 2.2               |
| 1-1/2                  | S6044WP014  | S6046WP014 | 1.900    | 0.145                | 20                | 2.7               |
| 2                      | S6044WP020  | S6046WP020 | 2.375    | 0.154                | 20                | 3.6               |
| 2-1/2                  | S6044WP024  | S6046WP024 | 2.875    | 0.203                | 20                | 5.7               |
| 3                      | S6044WP030  | S6046WP030 | 3.500    | 0.216                | 20                | 7.5               |
| 4                      | S6044WP040  | S6046WP040 | 4.500    | 0.237                | 20                | 10.7              |
| 5                      | S6044WP050  | S6046WP050 | 5.563    | 0.258                | 20                | 14.6              |
| 6                      | S6044WP060  | S6046WP060 | 6.625    | 0.280                | 20                | 18.9              |



**Fig. S6144SP & S6146SP - Sch 40 Seamless Pipe**

| Nominal Diameter<br>in | Part Number |            | OD<br>in | Wall Thickness<br>in | Pipe Length<br>ft | Weight<br>lb / ft |
|------------------------|-------------|------------|----------|----------------------|-------------------|-------------------|
|                        | 304 / 304L  | 316 / 316L |          |                      |                   |                   |
| 1/8                    | S6144SP001  | S6146SP001 | 0.405    | 0.068                | 20                | 0.2               |
| 1/4                    | S6144SP002  | S6146SP002 | 0.540    | 0.088                | 20                | 0.4               |
| 3/8                    | S6144SP003  | S6146SP003 | 0.675    | 0.091                | 20                | 0.5               |
| 1/2                    | S6144SP004  | S6146SP004 | 0.840    | 0.109                | 20                | 0.8               |
| 3/4                    | S6144SP006  | S6146SP006 | 1.050    | 0.113                | 20                | 1.1               |
| 1                      | S6144SP010  | S6146SP010 | 1.315    | 0.133                | 20                | 1.6               |
| 1-1/4                  | S6144SP012  | S6146SP012 | 1.660    | 0.140                | 20                | 2.2               |
| 1-1/2                  | S6144SP014  | S6146SP014 | 1.900    | 0.145                | 20                | 2.7               |
| 2                      | S6144SP020  | S6146SP020 | 2.375    | 0.154                | 20                | 3.6               |

**Fig. S6184SP & S6186SP - Sch 80 Seamless Pipe**

| Nominal Diameter<br>in | Part Number |            | OD<br>in | Wall Thickness<br>in | Pipe Length<br>ft | Weight<br>lb / ft |
|------------------------|-------------|------------|----------|----------------------|-------------------|-------------------|
|                        | 304 / 304L  | 316 / 316L |          |                      |                   |                   |
| 1/8                    | S6184SP001  | S6186SP001 | 0.405    | 0.095                | 20                | 0.3               |
| 1/4                    | S6184SP002  | S6186SP002 | 0.540    | 0.119                | 20                | 0.5               |
| 3/8                    | S6184SP003  | S6186SP003 | 0.675    | 0.126                | 20                | 0.7               |
| 1/2                    | S6184SP004  | S6186SP004 | 0.840    | 0.147                | 20                | 1.0               |
| 3/4                    | S6184SP006  | S6186SP006 | 1.050    | 0.154                | 20                | 1.4               |
| 1                      | S6184SP010  | S6186SP010 | 1.315    | 0.179                | 20                | 2.1               |
| 1-1/4                  | S6184SP012  | S6186SP012 | 1.660    | 0.191                | 20                | 2.9               |
| 1-1/2                  | S6184SP014  | S6186SP014 | 1.900    | 0.200                | 20                | 3.6               |
| 2                      | S6184SP020  | S6186SP020 | 2.375    | 0.218                | 20                | 5.0               |



**Fig. 96BP4 Schedule 40 Seamless Brass Pipe\***

| Nominal Diameter<br>in | Part Number  | OD<br>in | Wall Thickness<br>in | Pipe Length<br>ft | Weight<br>lb / ft |
|------------------------|--------------|----------|----------------------|-------------------|-------------------|
|                        | 20 ft Length |          |                      |                   |                   |
| 1/8                    | 96BP4001200  | 0.41     | 0.062                | 20                | 0.3               |
| 1/4                    | 96BP4002200  | 0.54     | 0.082                | 20                | 0.4               |
| 3/8                    | 96BP4003200  | 0.67     | 0.090                | 20                | 0.6               |
| 1/2                    | 96BP4004200  | 0.84     | 0.107                | 20                | 0.9               |
| 3/4                    | 96BP4006200  | 1.05     | 0.114                | 20                | 1.3               |
| 1                      | 96BP4010200  | 1.32     | 0.126                | 20                | 1.8               |
| 1-1/4                  | 96BP4012200  | 1.66     | 0.146                | 20                | 2.6               |
| 1-1/2                  | 96BP4014200  | 1.90     | 0.150                | 20                | 3.1               |
| 2                      | 96BP4020200  | 2.37     | 0.156                | 20                | 4.1               |
| 2-1/2                  | 96BP4024200  | 2.87     | 0.187                | 20                | 6.0               |
| 3                      | 96BP4030200  | 3.50     | 0.219                | 20                | 8.7               |
| 4                      | 96BP4040200  | 4.50     | 0.250                | 20                | 12.7              |



**Fig. S64ST4 & S64ST6 – Seamless Instrumentation Tubing**

| Tube OD<br>in | Wall Thickness<br>in | Part Number  |              | ID<br>in | Tube Length<br>ft | Weight<br>lb / ft |
|---------------|----------------------|--------------|--------------|----------|-------------------|-------------------|
|               |                      | 304/L        | 316/L        |          |                   |                   |
| 1/8           | 0.035                | S64ST4035001 | S64ST6035001 | 0.055    | 20                | 0.03              |
| 1/8           | 0.049                | S64ST4049001 | S64ST6049001 | 0.027    | 20                | 0.04              |
| 1/4           | 0.028                | S64ST4028002 | S64ST6028002 | 0.194    | 20                | 0.06              |
| 1/4           | 0.035                | S64ST4035002 | S64ST6035002 | 0.180    | 20                | 0.08              |
| 1/4           | 0.049                | S64ST4049002 | S64ST6049002 | 0.152    | 20                | 0.1               |
| 1/4           | 0.065                | S64ST4065002 | S64ST6065002 | 0.120    | 20                | 0.1               |
| 1/4           | 0.083                | S64ST4083002 | S64ST6083002 | 0.084    | 20                | 0.1               |
| 5/16          | 0.035                | S64ST4035516 | S64ST6035516 | 0.243    | 20                | 0.1               |
| 3/8           | 0.035                | S64ST4035003 | S64ST6035003 | 0.305    | 20                | 0.1               |
| 3/8           | 0.049                | S64ST4049003 | S64ST6049003 | 0.277    | 20                | 0.1               |
| 3/8           | 0.065                | S64ST4065003 | S64ST6065003 | 0.245    | 20                | 0.2               |
| 3/8           | 0.083                | S64ST4083003 | S64ST6083003 | 0.209    | 20                | 0.2               |
| 1/2           | 0.035                | S64ST4035004 | S64ST6035004 | 0.430    | 20                | 0.1               |
| 1/2           | 0.049                | S64ST4049004 | S64ST6049004 | 0.402    | 20                | 0.2               |
| 1/2           | 0.065                | S64ST4065004 | S64ST6065004 | 0.370    | 20                | 0.3               |
| 1/2           | 0.083                | S64ST4083004 | S64ST6083004 | 0.334    | 20                | 0.4               |
| 1/2           | 0.120                | S64ST4120004 | S64ST6120004 | 0.260    | 20                | 0.5               |
| 5/8           | 0.035                | S64ST4035005 | S64ST6035005 | 0.555    | 20                | 0.2               |
| 5/8           | 0.049                | S64ST4049005 | S64ST6049005 | 0.527    | 20                | 0.3               |
| 5/8           | 0.065                | S64ST4065005 | S64ST6065005 | 0.495    | 20                | 0.3               |
| 5/8           | 0.083                | S64ST4083005 | S64ST6083005 | 0.509    | 20                | 0.5               |
| 3/4           | 0.035                | S64ST4035006 | S64ST6035006 | 0.680    | 20                | 0.2               |
| 3/4           | 0.049                | S64ST4049006 | S64ST6049006 | 0.652    | 20                | 0.3               |
| 3/4           | 0.065                | S64ST4065006 | S64ST6065006 | 0.620    | 20                | 0.4               |
| 3/4           | 0.083                | S64ST4083006 | S64ST6083006 | 0.584    | 20                | 0.6               |
| 3/4           | 0.095                | S64ST4095006 | S64ST6095006 | 0.560    | 20                | 0.7               |
| 1             | 0.035                | S64ST4035010 | S64ST6035010 | 0.930    | 20                | 0.3               |
| 1             | 0.049                | S64ST4049010 | S64ST6049010 | 0.902    | 20                | 0.4               |
| 1             | 0.065                | S64ST4065010 | S64ST6065010 | 0.870    | 20                | 0.6               |
| 1             | 0.083                | S64ST4083010 | S64ST6083010 | 0.834    | 20                | 0.8               |
| 1             | 0.095                | S64ST4095010 | S64ST6095010 | 0.810    | 20                | 0.9               |
| 1             | 0.120                | S64ST4120010 | S64ST6120010 | 0.760    | 20                | 1.1               |
| 1-1/4         | 0.065                | S64ST4065012 | S64ST6065012 | 1.120    | 20                | 0.8               |



**Fig. S62TP4 & S62TP6 – Sanitary Tubing**

| Tube OD<br>in | Part Number |            | Wall Thickness<br>in | I.D.<br>in | Tube Length<br>ft | Weight<br>lb / ft |
|---------------|-------------|------------|----------------------|------------|-------------------|-------------------|
|               | 304         | 316        |                      |            |                   |                   |
| 1/2           | S62TP46004  | S62TP66004 | 0.065                | 0.370      | 20                | 0.3               |
| 3/4           | S62TP46006  | S62TP66006 | 0.065                | 0.620      | 20                | 0.5               |
| 1             | S62TP46010  | S62TP66010 | 0.065                | 0.870      | 20                | 0.6               |
| 1-1/2         | S62TP46014  | S62TP66014 | 0.065                | 1.370      | 20                | 0.9               |
| 2             | S62TP46020  | S62TP66020 | 0.065                | 1.870      | 20                | 1.3               |
| 2-1/2         | S62TP46024  | S62TP66024 | 0.065                | 2.370      | 20                | 1.6               |
| 3             | S62TP46030  | S62TP66030 | 0.065                | 2.870      | 20                | 2.0               |
| 4             | S62TP48040  | S62TP68040 | 0.083                | 3.834      | 20                | 3.4               |
| 6             | S62TP49060  | S62TP69060 | 0.109                | 5.782      | 20                | 5.3               |

## Pipe

| Nominal IPS<br>in | Nominal O.D.<br>in | Schedule 5S |                 | Schedule 10S |                 | Schedule 40S |                 | Schedule 80S |                 |
|-------------------|--------------------|-------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|-----------------|
|                   |                    | Wall<br>in  | Pressure<br>psi | Wall<br>in   | Pressure<br>psi | Wall<br>in   | Pressure<br>psi | Wall<br>in   | Pressure<br>psi |
| 1/8               | 0.405              | -           | -               | 0.049        | 18150           | 0.068        | 25175           | 0.095        | 35175           |
| 1/4               | 0.540              | -           | -               | 0.065        | 18050           | 0.088        | 24450           | 0.119        | 33050           |
| 3/8               | 0.675              | -           | -               | 0.065        | 14450           | 0.091        | 20225           | 0.126        | 28000           |
| 1/2               | 0.840              | 0.065       | 11600           | 0.083        | 14825           | 0.109        | 19475           | 0.147        | 26250           |
| 3/4               | 1.050              | 0.065       | 9275            | 0.083        | 11850           | 0.113        | 16150           | 0.154        | 22000           |
| 1                 | 1.315              | 0.065       | 7425            | 0.109        | 12450           | 0.133        | 15175           | 0.179        | 20425           |
| 1-1/4             | 1.660              | 0.065       | 5875            | 0.109        | 9850            | 0.140        | 12650           | 0.191        | 17250           |
| 1-1/2             | 1.900              | 0.065       | 5125            | 0.109        | 8600            | 0.145        | 11450           | 0.200        | 15800           |
| 2                 | 2.375              | 0.065       | 4100            | 0.109        | 6875            | 0.154        | 9750            | 0.218        | 13775           |
| 2-1/2             | 2.875              | 0.083       | 4325            | 0.120        | 6250            | 0.203        | 10600           | 0.276        | 14400           |
| 3                 | 3.500              | 0.083       | 3550            | 0.120        | 5150            | 0.216        | 9250            |              |                 |
| 3-1/2             | 4.000              | 0.083       | 3100            | 0.120        | 4500            | 0.226        | 8475            |              |                 |
| 4                 | 4.500              | 0.083       | 2750            | 0.120        | 4000            | 0.237        | 7900            |              |                 |
| 5                 | 5.563              | 0.109       | 2950            | 0.134        | 3625            | 0.258        | 6950            |              |                 |
| 6                 | 6.625              | 0.109       | 2475            | 0.134        | 3050            | 0.280        | 6350            |              |                 |
| 8                 | 8.625              | 0.109       | 1900            | 0.148        | 2575            | 0.322        | 5600            |              |                 |
| 10                | 10.750             | 0.134       | 1875            | 0.165        | 2300            | 0.365        | 5100            |              |                 |
| 12                | 12.750             | 0.156       | 1825            | 0.180        | 2125            | 0.375        | 4400            |              |                 |
| 14                | 14.000             | 0.156       | 1675            | 0.188        | 2025            |              |                 |              |                 |
| 16                | 16.000             | 0.165       | 1550            | 0.188        | 1775            |              |                 |              |                 |
| 18                | 18.000             | 0.165       | 1375            | 0.188        | 1575            |              |                 |              |                 |
| 20                | 20.000             | 0.188       | 1400            | 0.218        | 1625            |              |                 |              |                 |
| 24                | 24.000             | 0.218       | 1375            | 0.250        | 1550            |              |                 |              |                 |
| 30                | 30.000             | 0.250       | 1250            | 0.312        | 1550            |              |                 |              |                 |

Burst Pressure calculated using Barlows' formula:  $P = 2ST/D$

- P = Theoretical internal bursting pressures
- S = 75,000 psi fiber stress
- T = Nominal wall
- D = Nominal O.D.

## Tubing

| Tube OD<br>in | Wall Thickness - Inches |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|               | 0.016                   | 0.020 | 0.028 | 0.035 | 0.049 | 0.065 | 0.083 | 0.095 | 0.109 | 0.120 | 0.134 | 0.156 | 0.188 | 0.250 | 0.313 | 0.375 | 0.500 | 0.750 |
| 1/8           | 19200                   | 24000 | 39000 | 42000 | 58800 |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 1/4           |                         | 12000 | 16800 | 21000 | 29400 | 39000 | 49800 | 57000 |       |       |       |       |       |       |       |       |       |       |
| 5/16          |                         | 9600  | 13440 | 16800 | 23520 | 31200 | 39780 | 45750 |       |       |       |       |       |       |       |       |       |       |
| 3/8           |                         | 8003  | 11998 | 14003 | 19598 | 26003 | 33203 | 38003 | 43598 | 48000 |       |       |       |       |       |       |       |       |
| 1/2           |                         | 6000  | 8400  | 10500 | 14700 | 19500 | 24900 | 28500 | 32700 | 36000 |       |       |       |       |       |       |       |       |
| 5/8           |                         | 4800  | 6720  | 8400  | 11760 | 15600 | 19920 | 22888 | 26160 | 28800 | 32160 | 37440 | 44880 |       |       |       |       |       |
| 3/4           |                         | 3998  | 5603  | 6998  | 9803  | 12997 | 16598 | 18998 | 21803 | 24000 | 26800 | 31200 | 37403 |       |       |       |       |       |
| 1             |                         | 3000  | 4200  | 5250  | 7350  | 9750  | 12450 | 14250 | 16350 | 18000 | 20100 | 23400 | 28050 | 37500 |       |       |       |       |
| 1-1/4         |                         | 2400  | 3360  | 4200  | 5880  | 7800  | 9960  | 11400 | 13080 | 14400 | 16080 | 18720 | 22440 | 30000 |       |       |       |       |

Burst pressures for 304 and 316 A269 tubing from -20° F and 100° F

The ASME code suggests a safety factor of four

Example: 1/4" O.D. x 0.035 = 5250 psi

For higher temperatures, multiply work pressure by

|     | 300° F | 500° F | 1000° F |
|-----|--------|--------|---------|
| 304 | 0.828  | 0.744  | 0.665   |
| 316 | 0.900  | 0.853  | 0.746   |